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# Worldwide Report

**EPIDEMIOLOGY** 



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# WORLDWIDE REPORT EPIDEMIOLOGY

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CHUADANGA DYSENTERY DEATHS--Chuandanga, Oct 4--Blood dysentery has claimed 24 persons and has attacked 2095 others in different villages over the past one month. The affected areas are Uthali and Senerhuda under Jibonnagar upazila, Drojoyramput under Damurhuda upazila, Alukdia and Momudzoma under Chuadenga Sadar. [Text] [Dhaka THE NEW NATION in English 5 Oct 84 p 1]

KUSHTIA JAUNDICE DEATHS--Kushtia, Oct 7--Jaundice has broken out in epidemic form throughout Kushtia and elsewhere during the past several months. In Kushtia Chuadanga and Meherpur districts nearly two thousand people have so far been affected by Jaundice. According to information available, so far 50 persons mostly pregnant women and children, died of this disease. When contacted a senior Professor of medicine in Dhaka told me that the disease is viral and infectious. He said there is no specific medicine for this disease. Rest and adequate Glucose drinks may help cure Jaundice. He was of the opinion that there is no restriction for food. He, however, suggested that the food should be fat-free. A senior pathologist in Dhaka told me that in Bangladesh at least 8 percent people are susceptible to Jaundice.

[Text] [Dhaka THE BANGLADESH OBSERVER in English 9 Oct 84 p 9]

GAIBANDHA DYSENTERY OUTBREAK--Gaibandha, Oct 13--Intestinal diseases have broken out in an epidemic form in 5 upazilas of Gaibandha district. According to local Civil Surgeon, till September 30 as many as 112 persons have died of dysentery out of 9824 persons attacked with the disease. Besides, 3 persons have died of diarrhea out of 138 persons attacked and 3 other persons died of Gastre-enterites out of 293 persons suffering from the disease. The worst affected areas are Gaibandha Sadar, Sundarganj, Sadullapur Palashbari and Gobindaganj upazilas. The main causes of the outbreak of disease are scarcity of pure drinking water and adequate number of medicines which the poor villagers can ill-afford to procure due to financial hardships. Adequate preventive measure have been taken and medicines including water purifying tablets had already been sent to the affected areas. [Text] [Dhaka THE BANGLADESH TIMES in English 14 Oct 84 p 2]

CHOLERA IN SATKHIRA--Satkhira, Oct 21--Cholera and dysentery have broken out in the flood hit areas of Tala and Satkhira upazila in an epidemic form. When this correspondent visited the affected areas recently he learnt that no effective measures were taken to check the diseases. The members of the Satkhira Red Cross Society visited the affected areas and distributed relief materials. [Text] [Dhaka THE BANGLADESH OBSERVER in English 23 Oct 84 p 9]

DYSENTERY, JAUNDICE EPIDEMICS--Satkhira, Oct 16--Blood dysentery has broken out in an epidemic form throughout Satkhira district. According to information at least 46 persons died of dysentery in different areas of Satkhira. No medical help has reached the areas so far. As a result the disease is spreading causing great panic among the poor villagers. Jaundice has also broken out in an epidemic form in some areas of the district, such as Tala Shyamnagar and Assassani upazilas. It is learnt that seven persons have so far died of the disease. The worst affected areas are Jhala, Gabura, Pathakhali, Baropukur of Shyamnagar upazila, Badartola, Puijala and Baintola of Assasuni upazila and Badhandasga Kalagachhi of Tala upazila. A good number of patients attacked with jaundice here admitted to different hospitals, it is further learnt. [Text] [Dhaka THE BANGLADENH OBSERVER in English 18 Oct 84 p 10]

DIARRHEAL DISEASES--Kushtia, Oct 22--Four thousand six hundred forty three persons are reported to have been attacked with diarrhoea, dysentery and gastroenteritis in different upazilas of Kushtia district and 34 persons have died of the disease up to 17th of this month local physicians said. According to an official report, 9 persons died in Daulatpur upazila, one Bheramara upazila, 17 in Kumarkhali upazila, one in Mirpur upazila, 5 in Sadar upazila and 2 in Khoksha upazila. It is further learnt that till now about 2,000 people of the areas have been suffering from the disease. According to local physicians, scarcity of pure drinking water is the main cause of the disease. Supply of essential medicines is too inadequate to meet the demand. The emergency medical teams deployed in the affected areas are still working. Our correspondent from Sirajganj reports: Cholera broke out in an epidemic form in some areas of Ratganj upazila recently. It is reported that five persons died in one day and over hundred others have been attacked with the disease at village Betua. Civil Surgeon's office said that they heard about it and precautionary measures were taken. [Text] [Dhaka THE BANGLADESH TIMES in English 23 Oct 84 pp 1, 8]

MORE DIARRHEAL DISEASES--Netrakona, Oct 23--With the recession of flood waters diarrhoeal diseases have broken out in flood-ravaged rural areas in an epidemic form, and according to available reports, these diseases have so far claimed 200 lives in the district. Malnutrition and paucity of drinking water are said to be the main causes of these diseases. Preventive and curative measures now being taken have proved to be inadequate.

[Excerpt] [Dhaka THE BANGLADESH OBSERVER in English 25 Oct 84 p 7]

INCIDENCE OF LATHYRISM—Kushtia, Oct 25—Over three thousand people have affected by lathyrism, a strange kind of disease prevalent in Kushtia and Rajshahi districts. The disease which attacked people of Daulatpur and Gangni upazilas of Kushtia and Meherpur districts since 1972 has now expected 3,000 victims. The victims include men, women and children. The disease paralyses the body and the victims are left on the mercy of others for their livelihood. According to doctors a kind of pulse "Khesari" is responsible for such a disease. The people of these areas are mostly poor. They used to take "Khesari" as their staple food. A recent survey suggests that almost one in each family on an average has been attacked by lathyrism. [Text] [Dhaka THE BANGLADESH OBSERVER in English 26 Oct 84 p 10]

DINAJPUR, RANGPUR DYSENTERY--Dinajpur, Oct 11--One hundred and twelve persons died of blood dysentery in different areas of Rangpur and Dinajpur districts recently. It is learnt that 32 persons died in Chirirbandar upazila alone. The death toll in Birol 10, in Kaharab 12, in Khanshama 12, in Parbatipur 10, in Pirganj 5, in Ghoraghat 4, in sadar 2, in Mithapukur 25, in Pirgacha 4, in Pirganj 3 and in Rangpur sadar 3. An official source said that various steps had been taken to combat the disease. He said that 90 thousand saline packets were distributed in Rangpur district. Sufficient quantity of antibiotic injections, tablet and capsules were also distributed in the affected areas. [Text] [Dhaka THE NEW NATION in English 12 Oct 84 pp 1, 8]

CSO: 5450/0028

AIDS CASE IN CONCEPCION-The minister of health, Dr Winstor Chinchon, revealed yesterday that he had requested confirmation of the history of the alleged case of AIDS (Acquired Immune Deficiency Syndrome) detected recently in Concepcion. He also asked for full compliance with existing norms for these situations. He indicated that the Ministry of Health has not yet been difficially notified about a new case of AIDS in Concepcion. He only knew the details given by the macs media and does not yet have any confirmed case. Answer to a reporter's question, he stated: "There is one confirmed case. Answer left the sountry during the process of investigation." [Excerp'] [Sintingu EL MERCURIO in Spanish 13 Nov 84 p C-7] 7717

CSI: 5400/ 010

MALARIA CASES INCREASE--According to the Health Ministry, the number of reported malaria cases in 1983 totalled 105,000 that is, twice as many as in 1978. Eighty-five percent of the national territory can be described as malarious areas. [Excerpt] [Bogota EL SIGLO in Spanish 21 Nov 84]

#### LOW INCIDENCE OF WHOOPING COUGH VACCINATION

Athens I KATHIMERINI in Greek 21 Nov 84 p 4

[Excerpts] More than half of the children in Greece have not been vaccinated against whooping cough. Whooping cough symptoms, even though they have been known since 1578, even today continue to be a very serious problem throughout the world and the disease is one of the most tormenting as well as one of the most dangerous childhood diseases mainly in infants, without excluding the infection of adults as well.

On Saturday, during the second and last day of the 4th Graduate Seminar of Pediatrics, the lecturer at the 2nd Pedriatrics Clinic of the University of Athens, Mr. Kh. Stavrinadís, emphasized this.

Mr. Stavrinadis said that whooping cough is characterized by catarrhal manifestations and intense paroxysmal coughing with the result that it is one of the most tormenting diseases of infants with a mortality rate of one in every 500 cases, and adults as well, where the ratio is one in every 5,000.

With the modern means at our disposal, he emphasized in continuing, these percentages have decreased. Thus, according to the National Statistics Service data, in our country in 1969 there were 10,690 cases of whooping cough with 22 deaths; in 1974, there were 3,913 cases with three deaths; and in 1979, another 6,416 cases with three deaths also.

The only way to prevent it and the only hope to eradicate this disease, Mr. Stavrinadis added, is with the universal anti-whooping cough vaccination.

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CSO: 5400/2507

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#### GIFT OF RABIES VACCINE PRESENTED BY FRANCE

Bissau NO PINTCHA in Portuguese 10 Nov 84 p 8

[Text] A hundred doses of anti-rabies vaccine were officially presented to the Guinean authorities at a brief ceremony health yesterday morning at the Ministry of Public Health. The presentation was made to the secretary general for public health, Dr Paulo Medina, by Mr Gerard Sallier, head of the French Cooperation Mission in Guinea-Bissau.

This gift comes within the general framework of the cooperation between France and our country, which involves the provision of technical aid and personnel (pharmaceutical and health) as well as a stock of medicines, of which the anti-rabies vaccine represents the first lot.

In addition, Mr Sallier said, other projects involving this sector are being studied, among others the strengthening of the primary health network in the Oio and Quinara regions.

During the presentation ceremony, Dr Medina stressed that this vaccine "will make it possible to deal with the dramatic situation created by the existence of rabies in the Oio, Bafata and Gabu regions, and to protect many people against this terrible disease. This aid represents to us an additional guarantee of the harmonious development of our health services."

On the other hand, Mr Sallier said, his country is prepared to develop and strengthen cooperation with Guinea-Bissau in the general health sector, so that we can have the best possible health coverage. He further gave assurance that France is concerned about and sensitive to the need for aid to the developing countries, mainly the most backward ones in Africa.

5157

RABID DOG BITE--A boy of 12, Suleimane Djalo, a native of Quebo, died in Bissau recently, after having been bitten by a rabid dog, the ANG correspondent in Tombali was informed by the health official in the Quebo sector, Comrade Sana Bamba. At the meeting attended by that health official and Henrique Rosa Moreira, head of the sectorial executive body, and Raul Camala, security commander for the sector, it was decided that all of the rabid dogs must be destroyed. It was noted that all of the nurses in that area attended the meeting. [Text] [Bissau NO PINTCHA in Portuguese 10 Nov 84 p 2] 5157

RABIES VACCINATION CAMPAIGN--Steps to eliminate rabies (a disease which attacks dogs), which had been detected in the Gabu region some months ago, have been reported by the regional livestock office in Gabu. The solution involved a campaign for vaccination against rabies, which will make prophylaxis for all canines in the eastern part of the country possible. As a result, the vaccination campaign has already been begun in the capital of the region, according to statements made by the livestock department official for the region, Roberto Sahm, and a team from his department will subsequently move on to the other sectors of the region. It was reported that one death has resulted from this disease in the Gabu hospital. The victim was a little girl from the Pitche sector. [Text] [Bissau NO PINTCHA in Portuguese 7 Nov 84 p 2] 5157

VACCINATION CAMPAIGN ENDS--The campaign of inoculation against contagious diseases such as tuberculosis, typhoid fever and measles conducted for 10 days in the settlements of Cufar, Mato Forroba, Uno, Iosi, Bodjimind, Cabolam N'Bodje and Bissa by a primary care health team from the Tombali Region ended on 19 September. The team, guided by Dr Herman Delpaut, a cooperating doctor, faced transportation difficulties, which prevented it from continuing the work in other areas in that southern region of the country. According to the correspondent of the Guinean News Agency (ANG), there are 14 persons hospitalized in a clinic in Tombali suffering from tuberculosis and 43 others receiving treatment at home, which leads to the spread of that disease in the Tombali region, considering that it is the most prevalent disease in that region. Meanwhile, there are five cooperating doctors in Tombali, one national doctor and two Danish interns responsible for primary health care among a population estimated at 55,000 inhabitants. It should be added that the cases of tetanus are reaching alarming numbers in that southern region of the country, particularly among new-born children because the mothers-to-be do not go to the hospital at the time of delivery, often being obliged to get inadequate treatment in the cutting of the umbilical cord, with consequent infection causing a considerable number of deaths among new-born children. [Text] [Bissau NO PINTCHA in Portuguese 29 Sep 84 p 2] 8711

HUMAN RABIES CASES—The Ministry of Public Health regrets to confirm the existence of three fatal cases of human rabies, which occurred recently in Oio region. The regional authorities have already been sent the appropriate instructions with a view to reducing the spread of the disease. [Excerpt] [Bissau NO PINTCHA in Portuguese 29 Sep 84 p 2] 8711

LEPROSY, TUBERCULOSIS IN BAFATA -- A campaign of vaccination against tuberculosis and Hansen's disease (leprosy) was undertaken in the Bafata Region by a basic health team led by its chief, Comrade Justino Freire Monteiro. According to the basic health chief of that region, that team will complete its work in all sectors that comprise the region, with only the Bafata sector remaining. There, vaccination against tetanus is underway at the various work places, 253 workers having already been vaccinated, 22 of them suspected of having tuberculosis and 3 with Hansen's disease. As for active disease prevention, the Bafata regional basic health chief told the ANG correspondent that systematic, daily vaccinations are conducted in that locality. According to its chief, that same team gave measles vaccinations to 2,303 children between the ages of 6 months and 4 years; of the major endemic diseases, there were 106 cases of leprosy and 36 of tuberculosis in the whole region, accounting for the largest number of sick persons. The Bafata sector already has 52 persons undergoing medical treatment. [Text] [Bissau NO PINTCHA in Portuguese 6 Oct 84 p 6] 8711

#### FEAR OF AIDS BRINGS DROP IN NUMBER OF BLOOD DONORS

Hong Kong HONGKONG STANDARD in English 23 Nov 84 p 1

[Text] Fear of contracting Acquired Immune Deficiency Syndrome (AIDS) through blood transfusions has been blamed for a drop in the number of blood donors in Hongkong.

This was revealed by the director of the Red Cross Blood Transfusion Service, Dr Susan Leong, who was speaking after the annual general meeting of the Red Cross yesterday.

The society's annual report for 1983/84 showed that 130,375 blood donations were made, a decrease of one percent on the 1982/83 period.

Leong said people might have been put off donating blood by the AIDS scare. "Many people think that they might contract AIDS through injection, but this is not true."

She said the Red Cross blood tests were stringent enough to prevent the disease from spreading through blood contamination.

Another factor blamed for the fall in the number of donors was bad weather. Last year Hongkong had a rash of typhoons.

Economic recession was also cited for the slight decrease. The closing of a number of firms and factories had an adverse effect on the number of routine donor sessions, the report said.

However, Red Cross statistics also showed that the number of donations in the last six months increased, compared with the same period last year.

A total of 70,562 donations was made between May and October this year, against 64,139 for the same period in 1983.

Leong said the demand for blood transfusions had also increased with the opening of the Princess of Wales hospital in Shatin in April.

But the organisation's latest publicity drive helped along by taxi and minibus associations, bad paid off.

Several hundred taxi and minibus drivers placed blood donation stickers inside their vehicles. As a result, many people telephoned and asked how they could help, she said

The annual report also said that with the tightening of resettlement criteria by refugee-receiving countries, the resettlement of refugees from the Kaitak North Transit Centre, which is managed by the Red Cross, had decreased.

Unless there was a drastic relaxation in admission policies by the refugeereceiving countries, the resettlement prospects for the refugees in the centre would remain "relatively low," the report said.

About 3,000 of those in the centre have been there for more than three years.

The population in the centre at the end of March was 4,119, a drop of almost 2,000 since March 1983.

CSO: 5440/016

CHOLERA VICTIM—A scaffolding worker, suffering from cholera, was yesterday reported to be recovering. A Medical and Health Department spokesman said the condition of Mr Mung Shiu—ming, 57, was "steady." He has been in hospital for a week but no decision has been made as to when he would be discharged, the spokesman said. Mung is still under observation in the isolation ward of Princess Margaret Hospital. The spokesman said only his family members were allowed to visit him. No other cholera cases have been reported since an alert was put out last week. Last Monday doctors confirmed that Mung was suffering from the disease—the first case since September 1982. Mung's case has been classified as a local one as he had not travelled abroad. Mung was examined by a private doctor on November 16 after complaining of diarrhoea and vomiting. He was admitted to Queen Elizabeth Hospital the following day and later transferred when it was suspected that he was suffering from cholera. [Text] [Hong Kong HONGKONG STANDARD in English 25 Nov 84 p 2]

CSO: 5440/016

GASTROENTERITIS IN THANE--Thane, November 5--Twenty-one people suffered from gastro after eating stale fish in Amberje village of Sahapur Taluka on Thursday and four of them died later, according to a report received here today. The block development officer, Sahapur, has reported that 15 of the patients are improving in the hospital at Sahapur and two others were discharged. Mass inoculation campaign has been undertaken in the village. A medical unit is also stationed there. [Text] [Bombay THE TIMES OF INDIA in English 6 Nov 84 p 3]

ENCEPHALITIS IN BENGAL--Calcutta, Nov 5--A total of 199 persons have died of encephalitis and 525 have been affected in four districts of West Bengal since October 5, Mr Ramnarayan Goswami, minister of state for health, said here today. The affected districts are Burdwan, Hooghly, Birbhum and Bankura, he added. Mr Goswami said Burdwan was the worst affected district with a death toll of 109. In Birbhum, Bankura and Hooghly 43, 28 and 19 persons have died of encephalitis. However, no death from encephalitis has been reported after October 29, he added. The state government has issued leaflets advising the villagers of the affected areas to use mosquitonets and mosquito repellants as the virus was carried by mosquitos. The state government has also provided Rs 40,000 for purchasing insecticides like DDT and BHC. Mr Goswami said the insecticides are being sprayed in the jungles and bushy and marshy areas of the villages to arrest the breeding of mosquitos. He said mosquito eradication was being carried out by the district authorities and voluntary organisations. Out of a 28.5-tonne stock of BHC spray, two barrels have been sent to each affected area, he added. Mr Goswami said doctors had concluded after research that the culex vishonoi mosquito was not the only kind of mosquito which carried the encephalitis virus as was so far believed. There were other vector (germ carrier) mosquitos which also carried the disease. Further, the disease was spread not only by pigs as believed earlier but by other domestic animals, too. [Excerpt] [Calcutta THE TELEGRAPH in English 6 Nov 84 p 2]

MORE ENCEPHALITIS CASES--Encephalitis claimed 74 more lives in south Bengal districts in the past 24 hours, taking the toll to 485 on Wednesday. According to information available with the Director of Health Services, about 1,195 people have been afflicted with the disease. Till now, there have been 260 deaths from encephalitis in Burdwan; 90 in Birbhum; 90 in Bankura, 40 in Hooghly and five in Midnapore. [Text] [Calcutta THE STATES-MAN in English 15 Nov 84 p 3]

ENCEPHALITIS OUTBREAK--Durgapur, Nov 1--The outbreak of encephalitis this time of the year comes as a surprise to the medical authorities in the district where the disease has claimed more than 95 lives already. Records with the authorities showed that encephalitis used to break out in summer and continued through the rainy season. This is the first time that it has broken out in October. Commenting on the observation of the medical authorities in this regard, a senior medical officer of the district said yesterday mosquotoes carrying encephalitis got a better chance to multiply because of the unusually heavy monsoon this year. Which was why the disease continued to spread in new areas despite steps taken by the authorities to contain it, he felt. The new areas included Durgapur in Burdwan district and Gangajalghati in Bankura district. Medical officers are concerned because the class four staff are allowed to rear pigs on hospital campuses. "It is a fact that the disease occurs particularly in those areas where pigs live," they maintained. [Text] [Calcutta THE STATESMAN in English 2 Nov 84 p 3]

CSO: 5450/0044

CHOLERA, MALARIA EPIDEMICS—Two epidemic diseases have thrown into mourning the town of Tortiya (in Katiola District) and Botro (in Bouake District). In the first case, it was cholera which caused 30 deaths among some clandestine diamond exploiters. In the second case, it was a serious form of malaria which killed about 20 children. There was rapid and effective assistance in both cases. In Tortiya which we visited from Tuesday, 13 November, to Wednesday, 14 November, there is still a great fear of death although the situation has medically been brought under control. From the arrival of the first medical team on Friday, 9 November, to the time of our visit, there were 145 declared cases of cholera which have been treated and cured. There was only 1 death which occurred at home. The disease continues to rage: 25 patients have been "hospitalized in the open air" on the premises of the health center; 7,000 inhabitants have been vaccinated out of a registered population of 5,000 [figures as published]. [Excerpts] [Abidjan FRATERNITE MATIN in French 19 Nov 84 p 1]

CHOLERA TREND CONTINUES--KOTA KINABALU--Cholera is continuing its comeback in Sabah after a lull early this year. Three new cases were recorded last week bring the total cholera toll for the year to 39, spread over 16 districts. The latest cases are from the Kota Kinabalu area--Kampungs Lok Kurai and Pondo and the Kepayan police barracks. Cases of cholera started reappearing in Sabah in July after a six-month spell free of the disease. [Text] [Kuala Belait BORNEO BULLETIN in English 27 Oct 84 p 18]

### MALARIA CASES DECREASE THIS YEAR

Port Louis L'EXPRESS in French 22 Oct 84 p 6

[Text] There was a 78 percent decrease in the number of recorded malaria cases during the first 9 months of this year compared to the first 9 months of 1982. The number of recorded cases from January to September 1984 was 133, compared to 622 for the corresponding period in 1982.

Mauritius was declared a malaria-free zone just a few years ago. After the cyclone activity of the 70's, however, there was a renewed incidence and the number of cases rose steadily at the end of the 70's and the beginning of the present decade.

The number of cases during the nine months of 1981, 1982, 1983 and 1984 were 579, 622, 261 and 133 respectively [as printed].

In 1982, the government began a campaign to eradicate the disease. Insecticide sprayings were carried out at the beginning of 1983 and 1984 and a public education campaign was launched.

The ministry is continuing its campaign to wipe out malaria. In the context of this campaign, a World Health Organization (VHO) team headed by Dr. Giri is expected in Mauritius next month to ascertain the results of the campaign, review the program and design a strategy for future action.

The agencies involved explain the significant drop in the number of malaria cases recorded in recent years by ministry efforts to motivate the public, by the spraying of regions believed to be malaria pockets, by a strengthened surveillance system both in the port and at the airport and by the drought which has struck the country the last 2 years.

The Health Ministry's "Malaria Unit" has stepped up its campaign this year in order to achieve the goal of zero native cases. With this in mind, the number of field officers has been increased from 100 to 150 and home visits are made every 15 days instead of once a month.

Moreover, approximately 500 additional workers will be recruited from the "Development Works Corporation" for the spraying campaign which will extend from January to March of 1985.

The "Malaria Unit" is also initiating an operation to destroy anopheles larva as soon as they hatch in stagnant water.

Authorities state they are unable to estimate the amount of time that will be necessary to achieve their goal of zero native cases because it depends on several factors, among others, the resistance developed by the vectors, climatic conditions, public cooperation, etc.

The authorities stress that cases originating outside the country--which are unavoidable given the importance of tourism--must be detected in time so they can be treated immediately.

The ministry is requesting that the public cooperate in this campaign to wipe out malaria by removing all empty containers in which vater could accumulate and serve as a habitat for mosquitoes and by taking care that water does not stagnate on the roofs of houses, especially in summer.

The campaign to eradicate malaria is financed by WHO and by 7 million Rs in aid from the Gulf Countries.

CAMPECHE MALARIA CASES--Campeche--Deputy Hermelinda Rosado Mendez said yesterday that 4,422 cases of malaria, 90 of which are serious, have been reported here. She said that since 1977 reported cases have increased from 6 to 4,422. She added that migratory movements from Central American countries, especially Guatemala and Belize, constitute a potential risk for the continuous introduction of this disease. [Summary] [Mexico City UNOMASUNO in Spanish 7 Nov 84 p 6 PA]

#### BEIRA MEASLES VACCINATION CAMPAIGN POSTPONED

Maputo NOTICIAS in Portuguese 6 Nov 84 p 8

[Text] The first vaccinations planned by the Health Office in the capital city of Sofala after outbreaks of measles were reported in the 14th, 15th, 17th, 21st and 22nd precincts of the city of Beira ended unsuccessfully due to the inadequate support provided by the respective sponsorship groups entrusted with the task of mobilizing the population for the vaccination campaign in advance.

Some days ago, Jorge Anapali Mpiuca, city health director for Beira, had told our staff in that city about a meeting scheduled to report the results of the vaccination of the children in the precincts mentioned against measles.

Because of the inadequate support, the health brigades sent to these precincts immediately suspended their work, since, according to Jorge Mpiuca, very few mothers appeared with their children at the stations in those precincts to have them vaccinated.

This Beira health official said that the notices of the visit to be paid to those precincts by the health brigades went out 4 days in advance, to allow the sponsoring group enough time to see that the information reached the entire population in the area.

The first five precincts, located to the north of the city of Beira and scheduled for the first lot of vaccinations, were those most seriously affected by the epidemic, for which reason they still need the health care which was previously the responsibility of the respective health units.

Jorge Mpiuca explained that the office dispatched brigades to the residential zones not because of any incapacity on the part of the health units there, but rather in order to reestablish vaccination campaigns as a continuing process, rather than waiting for epidemic outbreaks. In the course of this work, the brigades are explaining the need for vaccination of their children immediately after birth to the mothers.

"We have not established any goals as to the number of children to be vaccinated. Our principle is to vaccinate as many as possible. Therefore, we have decided to support the health units, because we feel that alone they would have difficulty in carrying out the task," Jorge Mpiuca explained. He added that "in the first five precincts, we did not vaccinate the expected number of children because of the circumstances described."

According to a graph showing the development of measles this year, the first cases appeared in January of 1984, showing an upward trend to the end of the first half of the year. The incidence as shown on the graph began to decline as of August.

"When we assessed the graph again in September, we saw a sporadic increase in cases, which led us to launch a new campaign on the basis of this sudden rise in measles cases," our source added.

Reports indicate that the majority of the children affected by measles live in districts in the province of Sofala, although the capital city has had few cases, according to the weekly assessments made by the health units in the precincts.

The vaccinations cover children in the target age group, that is to say between 9 and 23 months. The director said that the health units have had some cases involving children outside this target group, an indication that these children were not vaccinated at the proper time, in other words, immediately after birth.

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MEASLES VACCINATIONS IN BEIRA--A Health Services source at the Beira level said that the vaccination campaign against measles, which has broken out again after a decline in August, will be resumed tomorrow. Vaccination had been interrupted to conduct a study of the procedures to be followed in this second phase inasmuch as the first campaign did not receive much participation because there was not an active mobilization by the political and administrative organizations of the neighborhoods affected by the outbreak. This second campaign first of all extends to the most affected zones and then the less affected ones. The first vaccination was given in five neighborhoods of Manga. For a greater participation, this time neighborhood organizations, members of the 000 [Organization of l'ozambican Women], in addition to organizations primarily involved, will be included in the mobilization. The vaccination campaign will cover especially the children who were not able to go to the health stations for the measles vaccination even though these are given at the health stations every day. For that reason, the health professionals are going to conduct an awareness campaign among mothers so that they will take their children to the vaccination places. [Text] [Beira DIARIO DE MOCAMBIOUE in Portuguese 13 Oct 84 p 16] 8711

BEIRA MEASLES OUTBREAK--A new outbreak of measles has just been reported in the Nhangau neighborhood on the periphery of the city of Beira, our reporters learned from the Health Office in the provincial capital of Sofala. This outbreak was identified after the health units in that city had seen an unusual influx of children affected by the disease, the majority of them residents of that part of the city of Beira. A few days after the epidemic was reported, the Communal Settlements Office in the city instructed the Health Office to take the necessary steps. The Health Office in the city of Beira has already organized a brigade of nurses who will proceed shortly to Nhangau to undertake vaccination of the children who have not yet been affected by the epidemic. [Text] [Maputo NOTICIAS in Portuguese 31 Oct 84 p 1] 5157

#### ANNUAL IMMUNIZATION WEEK ESTABLISHED

Kaduna SUNDAY NEW NIGERIAN in English 28 Oct 84 p 8

[Article by Nkem Agetua]

[Text] AS from next year one week would be set aside annually for the propagation of the objectives of immunization campaign against communicable diseases in children, on which more than 20 million Naira has already been spent, Head of State, Major General Muhammadu Buhari has announced.

General Buhari who gave this assignment to the Federal Minister of Health and and its state counterparts, in Lagos yesterday was speaking at the launching of the National Expanded Programme on Immunization (EPI) at Dodan Barracks.

The Head of State said that the EPI was one of the strategies of his administration for the implementation of a vital aspect of the nation's health care delivery system through the intensification of immunization programmes and control of communicable diseases.

"This administration is determined to pursue with vigour the re-orientation of our health care strategy in favour of preventive health and primary health care." he said.

General Buhari disclosed that the federal military government has invested a sum of 20 million Naira in support of EPI for the procurement of vaccines, cold chain equipment (freezers, refridgerators, ice cans and vaccine carriers), jet-injectors, syringes, needles and vehicles.

He said that these materials were distributed free to all the states in addition to an annual subvention for the maintenance of the existing infrastructural facilities and new facilities provided under the primary health care programme.

The head of state said that between 1979 and last year over 32 million children all over the country were immunised against deadly diseases such as poliomilitis, tetanus, diphtheria, pertussis, tuberculosis and measles. He however expressed disappointement that there had not been any appreciable change in the morbidity and mortality of these diseases, "due to the inadequate management as well as financial constraints, after nearly five years of the nation embarking on the programme."

Dr. Emmanuel Nsan, the Minister of Health in his speech said that the concern of his ministry was to ensure that the programme was effectively implemented to increase coverage and there by reduce drastically the incidence and consequences of the target diseases. He however pointed out that government's efforts would not succeed without the participation of parents, teachers, health education, traditional rulers and the mass media.

Mr. J. P. Grant, the Executive director of UNICEF, in an address read on his behalf by Mr. R. Reed said that no country in the world had been able to achieve the 80 percent of immunisation coverage target the country had earmarked. He said that no country had also embarked upon a national immunization programme with the type of zeal, readiness and enthusiasm as that of Nigeria.

He then drew attention to the fact that no programme of the EPI scope could succeed without the support of the media, religious leaders, traditional leaders, non-governmental organisations and service clubs.

General Buhari launched the programme by administering doses of the Vaccines to two kids aged between four and six months at Dodan Barracks.

Shortly before he administered the vaccines, General Buhari said, "there is no doubt in my mind, that with the judicious use of our resources, money, manpower and materials we should be able to protect the lives of our children, who constitute the nation's future strength and wealth, by this simple, affordable and effective programme."

#### HOMOSEXUAL MEN FOUND SUSCEPTIBLE TO CONTAGIOUS HEPATITIS

Oslo AFTENPOSTEN in Norwegian 6 Nov 84 p 10

[Article by Liv Brandvold: "Homosexual Men Susceptible to Infectious Hepatitis"]

[Text] A study conducted among 121 homosexual men living in the Oslo area showed that particularly those who do not live in a permanent relationship are a susceptible risk group for contracting hepatitis B (infectious hepatitis). "We found signs of past or present hepatitis B virus infection in 45 men—or 37.6 percent of them. This is ten times higher than in the rest of the Norwegian population," advised Dr Georg Petersen of the homosexual counselling service of the Oslo Health Council.

"Corresponding studies in New York and Stockholm show that about 70 and 50 percent, respectively, of homosexual men are affected. The situation here is not as bad as in other countries, but this group is more at risk than others in Norway," Dr Petersen states. He emphasizes that those who were examined do not constitute a representative sampling in that it is not known how large the entire group is, but the study nonetheless says a good deal about the outbreak of hepatitis B among homosexual men. All of those who participated did so willingly and each of them stated that he had not had contact with injected narcotics.

The objective of the study--which was undertaken by four doctors and made public in the latest issue of the journal of the Norwegian doctors' association--also was to find out whether there was a need for a vaccine against hepatitis B in the milieu surrounding homosexual men.

"It shows clearly that the need exists as a part of the preventive efforts among those who have been stricken. No systematic vaccination efforts—with guidelines concerning who in Norway should be vaccinated against hepatitis B—have been instituted, but homosexual men will be included. We are ready to start but must have the medicine for the vaccinations, which is expensive—about 1.000 kroner for a complete vaccination.

"This is obviously expensive, but on the longer term, society would benefit from it. Once people become seriously ill, it will cost considerably more and one must also look at the human aspect of the matter," Dr Georg Petersen points out. He emphasizes the additional significance of providing health information as relates to the group under discussion.

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#### HEALTH COVERAGE FOR ALL BY YEAR 2000 PROMISED

Lahore THE PAKISTAN TIMES in English 24 Nov 84 pp 1, 12

[Text] Karachi, Nov 23—The Federal Minister for Planning and Development, Dr Mahbubul Haq said here today that Pakistan was deeply committed to the goal of providing primary health cover for all by the year 2000.

Addressing a WHO PMA workshop in the 'Role of doctors' the Minister said that as a signatory to the Alma Ata Declaration of September 1978, Pakistan was now actively involved in implementing the commitment through the current five-year plan in which the expenditure on health had been increased four times.

Dr Mahbub said that one of the immediate tasks taken up by the Government was the immunisation of children from deadly diseases. He disclosed that the target set out in the current five-year plan had been revised. The Government, he added, is determined to achieve the target of total immunisation by 1985. He added that the yearly target of immunisation had been increased from one to 12 million children.

He said that 20 million oral dehydration packets were available, 12,000 'Dais' would be trained to cover all the villages in the country by 1985-86.

The Minister said that these measures entailing a total investment of \$20 million would help in saving 80 percent children from deadly diseases by next year.

While thanking the UNICEF and WHO for their valuable assistance in this respect, Dr Mahbub said that the task would not be finished. Rather it would be institutionalised to continue it further. It was a part of the programme to provide health cover for all by the year 2000.

Outlining the government policy and steps taken to provide better health facilities to the people, particularly of rural areas, the Minister said that despite tight budget position, the allocations for health sector were increased by 45 percent during 1983-84, the first year of the plan.

He said that the quantum could not be maintained during the second year of the plan and assured that proper care would be taken during the next year.

Underlining the importance of having a nation-wide network of health services, the Minister said that the current plan envisages increasing the provision of potable water from 77 to 90 percent people in the urban areas and from 22 to 50 percent in the rural areas. The position in respect of sewerage would also be improved in both rural and urban areas.

The Planning Minister referred to the problems facing the doctors in the country and said that the Committee set up by the Committee headed by him had made a number of recommendations to the government.

He said that, as per the recommendation of the Committee, of creating 1500 new jobs, 1774 new jobs were created and filled in during the period of less than two years. Similarly, he said that 92 percent of the new medical graduates were provided house jobs.

He, however, said that the suggestion of the Committee for running double shifts in hospitals could not be properly implemented. Only in a few places it could be introduced.

The Minister called for chalking out a comprehensive 10 to 15 year programme of having an extensive network of health services.

Dr Mahbub termed as 'unrealistic expectation' that government should absorb all the doctors. It would not be desirable policy in their own and nation's interest.

The Minister underlined the need for paying greater attention to the rural areas where 70 percent of the country's population lived, he said that less than 15 percent doctors served in the rural areas.

He stated that congenial environment is being created in the rural areas with the development of infra-structure such as better roads and electricity to attract more doctors to the rural areas.

The Minister advised the Pakistan Medical Association to prepare a national plan rather than putting up pressure on the government to set up more hospitals. He said that government had offered to provide more incentives to the private sector to come in this field.

He also proposed for setting up a revolving fund of Rs 250 million through contribution of doctors. Government would also contribute to this fund to help the struggling doctors to settle in this profession.

He said that the Government was also laying emphasis on the training of para medical personnel. During the current plan 30 new schools for para-medical staff would be set up in the country.

Emphasising the primary role of the government, Dr Mahbub said that it was directed towards making available health facilities to all and not a few. But this would require long struggle which would be worthwhile. Let all of us be partners in this struggle, he concluded.—APP

### CENTRAL LEADERS ON ENDEMIC DISEASE CONTROL

OWO40523 Beijing Domestic Service in Mandarin 1200 GMT 3 Dec 84

[Text] According to our reporter Wang Weiting, at the request of Comrade Li Desheng, member of the Political Bureau and head of the CPC Central Committee Leading Group for the Prevention and Treatment of Endemic Diseases, Guo Ziheng, deputy head of the group and vice minister of public health, this afternoon briefed reporters in the capital on the work done to control endemic diseases in our country.

Guo Ziheng said: In the 35 years since the founding of the party and state we have attached great importance to the work of preventing and treating endemic diseases. Our country now has made considerable achievements in this work. Through investigation, we have gained a clear, general understanding of the current situation of these diseases. Major epidemics that have broken out have been put under control. To control a disease caused by fluorine poisoning in some localities, as many as 9,000 water-improvement projects have been completed since the 3d Plenary Session of the 11th CPC Central Committee. There have been immense changes in areas where endemic diseases were once prevalent.

Comrade Guo Ziheng continued: Despite the considerable achievements our country has made in preventing and treating endemic diseases, the work in this regard will continue to be heavy in the days to come. Comrade Deng Xiaoping recently wrote an inscription, which reads: Control endemic diseases for the benefit of the people. An inscription by Comrade Chen Yun reads: Do well work to control endemic diseases to raise the health level of our nation and to benefit our people. In a letter to Comrade Li Desheng, Comrade Zhao Ziyang stated that the work of endemic disease control has a very significant effect on the people's well-being, production, and national defense; it is hoped that you, together with comrades in various localities, will continue to grasp this work firmly, implement the necessary measures, and see to it that the work proves to be a real success.

The CPC Central Committee Leading Group for the Prevention and Treatment of Endemic Diseases has expressed the hope that party committees and governments at all levels will enhance their understanding of the harmful effects of endemic diseases, further strengthen their leadership, and try to achieve effective results in creating a new situation in the work of preventing and treating endemic diseases.

## PRC SUCCESSFULLY COMBATS ENDEMIC DISEASES

OW051325 Beijing XINHUA Domestic Service in Chinese 1504 CMT 4 Dec 84

[Report by Liu Peiheng]

[Excerpt] Beijing, 4 Dec (XINHUA)—This reporter has learned from the office of the Leading Group for Prevention and Treatment of Endemic Diseases under the CPC Central Committee that China has scored great achievements in preventing and treating endemic diseases and that cadres and the masses in all localities continue to grapple with endemic diseases in order to create a new situation in preventing and treating these diseases.

The party and the government have attached great importance to the work of preventing and treating endemic diseases. Since the 3d Plenary Session of the 11th CPC Central Committee, party organizations at all levels have constantly fortified the leading groups for prevention and treatment of endemic diseases and their offices. Research institutes for preventing and treating endemic diseases have been set up in many provinces, municipalities, autonomous regions, prefectures, and counties. At present, over 3,000 specialists have become the main force in preventing and treating endemic diseases. Sanitation and antiepidemic stations at all levels undertake the prevention and treatment of endemic diseases as an important task in preventing epidemic diseases. More research institutes in endemic diseases have been set up in China, and the number of scientists and technologists in this field is on the increase. A dozen or so medical colleges in China have set up research institutes (laboratories) for preventing and treating endemic diseases. Specialists, professors, scientists, and technologists have actively researched into the causes of endemic diseases as well as the methods of prevention and treatment, thereby contributing to the control and elimination of these diseases.

Recently the Leading Group for Prevention and Treatment of Endemic Diseases under the CPC Central Committee has repeatedly stressed that in preventing and treating endemic diseases in future, it is necessary to follow the guidelines of the 3d Plenary Session of the 12th CPC Central Committee, coordinate efforts, conscientiously implement the guidelines embodied in the recent inscriptions and letters of the central leading comrades, resolutely carry out reforms, and enforce the cardinal principle of linking prevention and treatment of diseases with elimination of poverty and achievement of prosperity, so that people in disease-affected areas will soon regain health and wealth, to the benefit of their offspring.

# ARMY SYMPOSIUM ON EPIDEMIOLOGY OF VIRAL HEPATITIS

Beijing JIEFANGJUN YIXUE ZAZHI [MEDICAL JOURNAL OF CHINESE PEOPLE'S LIBERATION ARMY] in Chinese No 3, 20 Jun 84 pp 233-235

[Article by Yu Guanlie [0060 0342 3525]]

[Text] The Armed Forces Specialized Epidemiological Viral Hepatitis Science Symposium was convened in Kunning from 15-18 September 1983. The symposium received 73 papers which examined fundamentally the progress in research and results achieved in the armed forces on viral hepatitis epidemic since 1981, and have given impetus to future research into armed forces viral hepatitis epidemiology.

# 1. Serumal Epidemiological Investigative Research

There are about 30 papers on this topic. In recent years, our army has more widely launched investigative work on hepatitis, especially on B hepatitis serumal epidemiology. After investigating the distribution characteristics of B hepatitis in an army unit, we have gained further knowledge of the infection situations, etc. Numerous units have used reversion passive hemagglutination (RPHA) on new and older soldiers, cadres, and administrative staff, etc., to investigate their HB Ag carrying status. The following results have been obtained: 5-26 percent positive, the normal is 7-13 percent, the average is about 10 percent, and it matches the national HB Ag positivity. Among the new and older soldiers, and cadres, the soldiers have distinct differences in the HB A positivity. The study of the new soldiers have revealed that those from the southern provinces have higher positivity: Guangdong 16.9-26.0 percent, Fujian 12.2-20.5 percent. Guizhou 13.0-17.2 percent, Hunan 16.9 percent, and Guangxi 15.9 percent. Those from the northern provinces have lower positivity, mostly in the 4.4-12.0 percent range. The investigation of the distribution of positive HB A in the army indicated that it is very widespread and diverse. For example, investigation of 265 squads in Unit 54582 revealed that 35.1 percent of them have positive HB\_A. A Military Medical College No 4 survey showed 40 percent, and most of the (aforementioned) squads have only 1-2 cases. In the survey of surface antibody (anti-HB\_), the currently used method is still the passive hemagglutination analysis (PHA), the positivity is slanted lower (5.4-22.4 percent). Some units use the more sensitive solid radio-immunity analysis (SPRIA), then the positivity is 37.0-41.

percent. Many units have carried out  $\mathrm{HB}_{e}\mathrm{A}_{g}$  testing (1D) of positive  $\mathrm{HB}_{s}\mathrm{A}_{g}$ , then positivity is 20-40 percent, and the higher the  $\mathrm{HB}_{g}\mathrm{A}_{g}$  titre the higher is the positivity of  $\mathrm{HB}_{e}\mathrm{A}_{g}$ . For example, in the investigations by the Affiliated Anti-Epidemic Team of the General Logistics Department show that when the  $\mathrm{HB}_{g}\mathrm{A}_{g}$  titre is 1:8 the  $\mathrm{HB}_{g}\mathrm{A}_{g}$  positivity is 0, at 1:16 it is 22.2 percent, and at 1:128 it is 46.2 percent. Investigations by the Military Medical College No 4 showed that when the  $\mathrm{HB}_{g}\mathrm{A}_{g}$  titre is 1:8 the  $\mathrm{HB}_{e}\mathrm{A}_{g}$  positivity is 4.4 percent, at 1:16 it is 16.7 percent, and at 1:128 it is 39.4 percent; the results are very uniform. Consequently, it is indicated that in the diagnoses of the severity of infectiousness of positive  $\mathrm{HB}_{g}\mathrm{A}_{g}$ , if one cannot carry out other serological marking testing ( $\mathrm{HB}_{e}\mathrm{A}_{g}$ ,  $\mathrm{DNA}$  polyenzyme activity), one should integrate the magnitude of  $\mathrm{HB}_{g}\mathrm{A}_{g}$  to do analysis. The above two units have carried out investigations of B hepatitis infection status in the units, according to the three infection markings of B hepatitis ( $\mathrm{HB}_{g}\mathrm{A}_{g}$ , anti- $\mathrm{HB}_{g}$ , and anti- $\mathrm{HB}_{e}$ ), the total infection strengths were 54.4 percent and 54.0 percent, respectively, indicating that the B hepatitis infection rate was highest in the armed forces.

In the investigations of the A hepatitis antibody (anti-HAV), the Jinnan Military Research Institute has conducted enzyme immunological absorption tests (ELISA) on soldiers, the results showed a positivity of 89.4 percent, where the soldiers from the cities have a 77.3 per ent rate, and the soldiers from the villages have a 94.4 percent rate. The results of investigations using (SPRIA) by Military Medical College No 4 and the Affiliated Anti-Epidemic Team of the General Logistics Department are 75.8 percent and 83.3 percent, respectively. These indicate that the A hepatitis infection is very widespread in the adults of the armed forces.

2. Research Into the Etiological Classification of Acute Viral Hepatitis Patients

Four papers have been received (on the topic), all of which have used SPRIA or ELISA to detect anti-HAV  $I_gM$ , anti-HB<sub>c</sub> $I_gM$ , anti-HB<sub>c</sub>, and HB<sub>s</sub>A<sub>g</sub> or used RPHA to detect HB Ag. TAHA to detect anti-HBc, to diagnose A or B hepatitis. According to the more than four-fold specific antibody increase in the blood serum or using immune enzyme method to diagnose cytomegalovirus (CMV) or Epstein-Barr virus (EBV) infection, the elimination method is used to diagnose hepatitis which is Non A Non B. In the investigations of 147 cases of hepatitis of child patients by the joint effort of the Hospital 302 and the Academy of Military Medical Sciences, there are 47.6 percent type A. 12.2 percent type B. 12.9 percent AB combined infection, AB anteropesterior overlapping infection 20.6 percent, Non A Non B type 4.1 percent, and the CMV and EBV are D.7 percent and 2.0 percent, respectively. The Military Medical College No 4 has studied 163 cases of acute hepatitis in the Xian region. 74 cases of these involve children 15 years old or younger; there were 89.2 percent type A. 6.8 percent type B. and 4.1 percent Non A Non B. In the 89 cases for patients over 15 years of age, 19.1 percent were type A. 49.4 percent type B. and 31.5 percent were Non A Non B. The study by the Affiliated Anti-Epidemic Team of the General Logistics Department of 66 cases of child patients. A. B. and Non A Non B were 51.5, 27.3, and 9.1 percents. respectively, the AB combined type infection was 3.9 percent, and EBV and CMV infect\_ons were rare (1-2 percent). The adult patients have primarily type A (49.4-60.1 percent), Non A Non B type comes next (20.5-31.5 percent), type A is the least (21.9 percent), and EBV and CMV infections are rare. The above studies have contributed to the meaning of relative importance in the understanding of the current hepatitis patients in our country.

# 3. The Study of Transmission Medium of B Hepatitis

In order to observe the contamination frequency and the persistent existing period of the HB A, objects contacted by hepatitis patients for judging the possible transmission medium of B hepatitis, the Affiliat 4 Anti-Epidemic Team of the General Logistics Department has conducted HB A, checks on objects touched by the patients such as furniture in hospital rooms, silverware, barbering tools, playing cards, and the currencies (Renminbi) circulating in the society as well as among the patients. In looking at the results of the 580 samples examined, the  ${\rm HB_gA_g}$  objects touched by the patients have a 3.3-30.0 percent positivity; the playing cards used by the patients (17.5 percent), the barbering tools have the highest (30 percent) positivity, the currencies used by the patients have a 14.9 percent positivity, and the currencies circulating in the society have a 10.7 percent positivity. The positive type  $\mathrm{HB}_8\mathrm{A}_8$  samples were placed in 4°C for 5 months, then put in room temperature for 3 weeks while adding appropriate biological saline to carry out testing, and they still had a 15 percent positivity. It says that in the external environment the contamination areas of the material touched by the patients are very wide, and the positivity continuing time is longer. Mospital 180 has used ELISA and RPHA methods to conduct HB A. tests on the saliva and sweat of 203 B hepatitis patients and 210  ${
m HB}_{
m g}{
m A}_{
m g}$ carriers; the results indicate that the B hepatitis patients' saliva tested has a 4-time cumulative positivity of 70 percent and the sweat has a 20.4 percent positivity, and the HBsAg carriers have a saliva 4-time cumulative positivity of 76.6 percent and the sweat has 18.9 percent. The surveys have also verified that the  ${\rm HB_gA_g}$  positivity of saliva and sweat are related to the  ${\rm HB_gA_g}$  titre in the carrier's blood: the higher the titre the higher would be the HBgA, positivity of the saliva and sweat. The above study results indicate that paliva right have important effect in the transmission of B hepatitis. In order to probe into the possibility of blood trace spreading B hepatitis, the Infection Branch and Testing Branch of that hospital have used RPHA and ELISA methods to test HB.A. on the intravaneous and intramuscular injection needles and syringes used on the positive HB, patients as well as the residual material of intramuscular injections. There are 943 samples, and the ELISA tests positivities are: intravaneous needle 37.4 percent, intramuscular needle 20.1 percent, intravaneous injection residual material 24.7 percent, and syringe 6.7 percent; these are much higher than RPHA. The Epidemiology Teaching Research Clinic of the Military Medical College No I has also carried out ELISA HB, tests on various surface material, and has made observations on the continuing times of various  ${\rm HB_gA_g}$  surface material. The study showed the average detected  ${\rm HB_gA_g}$  positivity to be 18 percent. Categorized by distribution on the (hospital's) units, the Stomatology, the Infectious Disease, the Emergency Ward, the Supply Room, etc., have the highest positivity (22.5-33.3 percent). and Dermatology (8.3 percent) and Chinese Medicine (3.0 percent) have the

lowest positivities. This says that the contamination on various material in the hospital is quite serious, and it is discovered through the study of  ${\rm HB_sA_g}$  continuing time on the material surface that it is related to temperature. Under 30°C  ${\rm HB_sA_g}$  exist for at least 1 month, and it can exist for more than 5 months in  ${\rm 4^8C^8}$ . In order to determine the effect of sterilization on  ${\rm HB_sA_g}$ , the Affiliated Anti-Epidemiology Team of the General Logistics Department has observed the effect of epoxy acetic propyl on serumal sterilization. The five repeated testings have verified that epoxy acetic propyl might achieve 100 percent clearance on  ${\rm HB_sA_g}$ , anti-HB\_c and  ${\rm HB_eA_g}$  (as compared to the control section, using RPHA and ELISA to test  ${\rm HB_sA_g}$ , ELISA to test anti-HB\_c, and ID to test  ${\rm HB_eA_g}$ ). In order to observe the effect of alcohol immersion on HB\_A\_g removal, Hospital 180 soaked 38 positive type samples in 75 percent alcohol separately for 30 minutes, 3 hours and 6 hours. It was discovered that only after 6 hours of immersion could the entire sample be changed to negative type.

4. Study of the Effect of Serumal Infectiousness and Medicines of the  ${\rm HB_SA_g}$  Carrier Has on  ${\rm FB_SA_g}$  Carrier Becoming Negative

The Epidemiology Teaching Research Clinic of the Military Medical College No 3 has carried out a 6-month predictive survey on 36 donees of  ${\rm HB}_{\rm S}{\rm A}_{\rm g}$  positive blood type to observe the infectiousness of  ${\rm HB}_{\rm S}{\rm A}_{\rm g}$  positive blood. observation results indicate, among the 36 donees, that 14 people were of anti-HB negative before transfusion, 2 persons (14.3 percent) have B hepatitis after transfusion, and of the ones who had positive anti-HB, before transfusion not a single one got sick. However, judging from the serumal conversion rate of anti-HBc and anti-HBc it is higher after transfusion. For example, there were 9 and 12 cases, respectively, of negative anti-HB, and anti-HB among the donees before transfusion, there were 8 cases (88.9 percent) of anti-HBg and 8 cases (66.7 percent) of anti-HBg which became positive 4 months after transfusion; these indicate that the donee's B hepatitis incidence is lower, but his infection rate is higher. The results also show the strength of the carrier's infectiousness, the HB<sub>S</sub>A<sub>g</sub> titre in the blood, and whether  ${\rm HB_eA_g}$  being positive are all related; the higher the HB A titre the stronger is the infectiousness of the positive carrier.

In the research into the effects of medicines on continuous symptomless  ${\rm HB}_{\rm S}{\rm A}_{\rm g}$  carrier changing to negative, Military Medical Colleges Nos 1, 2 and 4, Guangzhou Military Medical Research Institute, etc., have separately tried on calf thymosin, hydropneumatic thistle extract, transfer factor and transfer factor combined levamisol, levamisol combined infantile paralysis sugar pellets, and levamisol combined Chinese medicine decoction to carry out observations. During the 1 to 6 months after the treatment continuous  ${\rm HB}_{\rm S}{\rm A}_{\rm g}$  checking was undertaken, in comparing to control section, it is verified that the aforementioned medicines have no clear effects on changing to negative.

5. Study of Non A Non B Hepatitis

The Hepatitis Immunology Clinic of Military Medical College No 1 has utilized the acute period and convalescence period blood serum of patients whose viral

hepatitis was caused by a sick blood donor to set up a SPRIA method, and has had detected a type Non A Non B hepatitis (NANBH) which was transmitted by blood (transfusion). Compared to other acute viral hepatitis and chronic hepatitis, it indicates that this system has strong specificity. In the clinical diagnoses of acute and chronic NANB hepatitis, the single blood serum NANBA, detection rate were 40.0 and 34.4 percents, respectively. For example, the checking process of a system of blood serum, NANBAg or NANBAg have the respective combined detection rate of 96.0 and 68.8 percents. Using this RIA checking system to survey the Guangzhou area, the natural infection rate among healthy people was 2-3 percent, after the patients had blood transfusion the infection rate was 11 percent, and the two have more pronounced difference (p is less than 0.01), indicating the possibility on NANBH virus transmission through blood. The two aforementioned objects used in RIA checking of  $HB_SA_g$  have respective detection rates of 15.0-17.5 percent and 28.5 percent (for the acute and chronic cases). Tests have also been run on 200 cases for the pathological classification of sporadic hepatitis (100 cases each of acute and dironic hepatitis). It was discovered that in the acute hepatitis, 72.0 percent were type B, 17.0 percent were type A, and 10 percent were NANB, and in the chronic hepatitis, 90 percent were type B and 10 percent were NANB. Therefore, the original type NANB hepatitis has no significant meaning in the spreading of hepatitis.

6. Research of Anti-HB  $_{\rm C}$  Detection Usin: Bicillus Colis Synthesis Nucleus Antigen (HB  $_{\rm E}{\rm A}_{\rm g})$ 

The Microbiological Epidemiology Department of the Academy of Military Medican Sciences has reported the results at the initial seromological identification of the bacillus colis synthesized  $\mathrm{HB}_{\mathrm{e}}\mathrm{A}_{\mathrm{g}}$ . It has initially shown that the  $\mathrm{HB}_{\mathrm{e}}\mathrm{A}_{\mathrm{g}}$  products of bacillus colis might be a substitute for the  $\mathrm{HB}_{\mathrm{c}}\mathrm{A}_{\mathrm{g}}$  liver extract, to be used as a test drug for checking the anti-HBe, and it has practical values in applications.

# 7. Research of Checking Methods

In recent years, there have been most distinctive developments in the checking methods of viral hepatitis. Numerous units have established the third generation checking method and have applied them to practical survey research work. The applications of SPRIA, ELISA, etc., checking methods have gradually become widely used. The symposium received 12 papers related to the checking methods. The related contents are: usin: FLISA for research in anti-HB, and anti-HB, checking, the research if using ELISA method to check A hepatitis--using anti-HAVF(ab') enzyma composite to substitute the routinely used anti-HAV enzyme binder to check A hepatitis anti-IgM, research of experiments in ELISA checking HBsAg, remarch of SPRIA checking anti-HAV IgM, research of using the immune precipitation method to check blood serum DNA polymerized enzyme activity of the B hepatitis patients and research in using dissociation circulative compound to improve the HBsAg detection rate, etc. The results of these research have contributed to more effective means of doing further work in the study of viril in patitis.

12744

# SERUM SPECIFIC DNA POLYMERASE IN HEPATITIS B

Beijing BEIJING YIXUEYUAN XUEBAO [JOURNAL OF BEIJING MEDICAL COLLEGE] in Chinese Vol 16 No 2, 18 May 84 pp 110-112, 114

[Article by Wu Jingxin [0702 2533 2450] et al. of Department of Internal Medicine, People's Hospital, Beijing Medical College: "Determination and Clinical Significance of Serum Specificity DNA Polymerase Activity on 112 Cases of Hepatitis B"]

[Summary] A group of 66 males and 46 females of more than 1 year of positive serum HBsAg was used as the subject of this study; 45 healthy blood donors served as the control. Compared with the control, the HBV specific DNA-P activity of 40 cases of asymptomatic carriers in the group of positive HBsAg was found to be higher to demonstrate continuous replication and infectivity. It was found to be still higher in the remaining cases of positive HBsAg with simultaneously positive HBaAg, indicating even greater infectivity. The rise of DNA-P activity was not found to have a direct or parallel relationship with the increase of SGPT, neither was it found to be influenced by HBeAg and anti-HBeAg; however, instead, it was found to be related to the chronic condition of hepatitis B, resulting from a prolonged and persistent infection of the disease. Since the determination of DNA-P activity is more specific and reliable than that of HBeAg and since the former is presently the accepted index for judging the effectiveness of treatment and the degree of recovery of hepatitis B, here as well as abroad, its extensive clinical application in China is recommended by the paper.

6248

# ISOLATION OF SOME ANTIGENS OF SCHISTOSMA JAPONICUM

Beijing CHINESE MEDICAL JOURNAL in English No 7, Jul 84 p 549

[Text]

Isolation of Same of the Antigens of Schistosoma Japonicum and Their Clinical Applications. Fu Qi, et al. Natl Med J China 64(2):75, 1984.

Six kinds of antigens from the eggs and adult worms of Schietosoma japonicum were isolated, comprising adult microsomal antigen (JAMA), aqueous soluble egg antigen (SEA), urea-soluble egg antigen (JEU) and its further fractionated products (JEC 1-3). They were analyzed by sodium dedecylsulfate polyacrylamide gel electrophoresis (SDS-PAGE), enzymelinked immunoelectrotransfer blot (EITB) and kinetic-dependent enzyme-linked immunosorbent assay (K-ELISA). All were quantitatively assayed by K-ELISA for specific antigenic activities rgainst sera of 39 patients with schistosomiasis japonica. The sera from 12 patients with diseases other than schistosomiasis and from 10 healthy adults were tested simultaneously as controls. JEC3 was antigenically more active (10 04. A  $460~\text{min}\times 10^{-2}.)$  than other antigens. Determination of the specific antibody (IgG) levels of S. japonicum by using JEC3, etc as diagnostic antigens in 30 chronic cases revealed that the level of anti-JEC3-antibody was the highest (11.7:007 ... A 460 min × 10...).

FITB test showed that only JEC3 exhibited no cross reactivity with sera of patients with paragonimiasis and clonorchiasis sinensis. EITB tests on patients with chronic schistosomiasis before and after praziquantel treatment showed that all positive zones of JEC3 disappeared. This indicates that JEC3 might be a more satisfactory antigen in the serodiagnosis of schistosomiasis juponica.

# NEW STRAINS OF LIVE POLIOVIRUS VACCINE

Beijing ZHONGGUO YIXUE KEXUEYUAN XUEBAO [ACTA ACADEMIAE MEDICINAE SINICAE] in Chinese Vol 5 No 5, Oct 83 pp 280-284

[Article by Chen Tongqiu [7115 4827 3808] et al. of Institute of Medical Biology, Kunming: "Studies on New Attenuated Strains of Type I Live Poliovirus Vaccine: I. The Development of a New Type 1 Attenuated Poliovirus (Zhong I-9 Strain)"]

[Summary] A seed strain, obtained from the feces of poliomyelitis patients in 1961 and 1964, was treated with ultraviolet radiation, passed 10 times through rhesus monkey kidney cells, and purified 5 times with plaque technic to produce the Zhong I-9. Its T. d, and S properties, genetic markers, were examined and found to be negative. Intracerebral inoculation in 61 rhesus monkeys produced no pathological or clinical poliomyelitis changes; a slight neuro-virulence was present in 32 monkeys following intraspinal injection. Its intratypic antigenic characters were found to be of different origin from those of the Sabin LSc.2ab strain. A preliminary batch of vaccine produced from the Zhong I-9 was thoroughly inspected and found to be free of bacterial, fungal, or other viral contamination. Its use for live poliovirus vaccine production is, therefore, proposed.

This paper was received for publication on 16 September 1982.

6248

NEW METHOD FOR DIAGNOSING SCHISTOSOMIASIS--Scientists of Nanchang, Jiangxi Province have developed a new and simpler method for effectively diagnosing schistosomiasis. The test requires one drop of blood from the patient's ear-lobe. Results are available in about one hour, making the new procedure much faster than the stool examination which was previously used. The method was developed jointly by the Jiangxi Provincial Institute of Parasitic Diseases and the Jiangxi Medical College. During the past two years, the Jiangxi Provincial Institute of Parasitic Diseases has used the new method to survey 500,000 people. The methods proved to be accurate in 93 percent of the cases. [Text] [Beijing CHINESE MEDICAL JOURNAL in English No 7, Jul 84 p 537]

EPIDEMIC OUTBREAK--Lima, 28 Nov (AFP)--Tacna health officials have reported that 18 children have died and another 56 have been affected by a strange epidemic spotted in three localities along the Chilean border. The children suffer from acute malnutrition and cough, and they foam and lose blood by mouth. [Summary] [Paris AFP in Spanish 2027 GMT 28 Nov 84 PY]

METRO MANILA SEES RECORD NUMBER OF TYPHOID CASES

Manila PHILIPPINES DAILY EXPRESS in English 9 Nov 84 p 7

[Text]

A RECCRD number of 76 typhoid fever cases in Metro Manila and neighboring area has been reported, prompting the Ministry of Health to issue a warning to the public against the acute intestinal disease.

The MOH Health Intelligence Service said the cases were reported by the San Lazaro Hospital for the week ending Nov. 3. The number was the highest at the hospital

this year. HIS chief Julio Valera said the number is way above the previous week's 41 and the average weekly typhoid admissions at the SLH

of only 10 for the past five years. Valera explained that of the total number, 71 were in Metro Manila, three in Bulacan, one in Cavite and another in Laguna.

Of the 71 cases, the highest was in Manila (19), followed by Paranaque, 12; Quezon City, 10; and Pasay City, eight. Valera said Makati registered

six typhoid cases, Las Pinas, five; Caloocan City, four; Malabon and Taguig, two each; and Mandaluyong, Navotas and Marikina, one each,

Almost 95 percent of the Manila cases came from the congested, depressed areas of Tondo district; 90 percent in Paranaque from Baclaran district; and most cases in Quezon City, Pasay and Makati from their respective depressed

ACCORDING to Dr. Antonio Faraon, MOH epidemiologist, most typhoid fever cases were young adults with ages ranging from 18 to 25 years, and children below 10 years,

Faraon said that typhoid, a highly-contagious disease characterized by general weakness due to continued fever and loose bowel movement, is carred by ingestion of water and food contaminated with excreta, and urine, and use of

4.4

articles and utensils of infected persons.

He said flies and other insects that thrive in uncollected garbage or waste matter are other causes of the disease, now endemic or prevalent in the country, particularly in Metro Manila, throughout the

He said the most effective safeguards against the disease are the drinking of potable, chlorinated or boiled water, eating of properlycooked or boiled food; non-contact with patients and their soiled articles and utensils; observance of personal hygiene, such as washing of hands before eating; proper disposal of garbage or waste matter, particularly the excreta, urine and contaminated articles of infected persons; and vaccination,

. . . VALERA also said there were 254 diarrhea cases admitted at the SLH for the week ending Nov. 3. (PNA)

# CONGO, KOREAN FEVERS ENDEMIC IN STITE AFEICA

# Johannesburg THE CITIZEN in English 28 Nov 84 5 18

# [Text]

CAPE TOWN. — A leading virologist has warned that the highly infectious Congo-Crimean and Korean Haemorrhagic fevers are endemic over a wide area of South Africa and that periodic outbreaks can be expected.

Professor J H S Gear, in an article in the South African Journal of Science, says medical officers should be alerted to diseases, especially when the patient has a recent history of travel through bush country, or contact with wild animals, carcasses or raw meat.

Prof Gear, head of the SA Institute for Medical Research and the National Institute for Medical Research and the Nat-

ional Institute for Virology in Johannesburg, says research by Dr R Swanepoel and his team at the National Institute for Virology high security laboratory found Congo-Cnmean virus antibodies in the blood of hares trapped in each of the fourprovinces, while Korean haemorrahagic fever virus antihodies were found in the blood of rodents collected in various parts of Zimbabwe and South Africa.

Korean haemorrhags, fever has only recently been detected in Southern Africa. It is not known to have caused human illness here, but there have been scrious outbreaks in Korea, I ast ern Siberia and the Republic of China

"On the base of our ex-

perience and that of others, medical officers should be alerted to the possibility that a patient is suffering from one of the so-called dangerous infectious fevers when he gives a history of recent travel in Africa — especially through bush country and of contact with wild animals, or of the handling of carcasses or raw meat," Prof Gcar says.

"The suspicion will be strengthened if the patient presents with high fever, complains of headache, sore throat, muscle and joint pains and nausea, shows signs of liver disorder and if he develops a tendency during the course of his illness to bleed from mucous membranes and from needle puncture wounds."—
Sapa

CONGO FEVER CASES--About 20 cases of Congo fever have been reported in South Africa over the last two years, according to Professor James Gear, Honorary Professor of Tropical Medicine at the University of the Witwatersrand. He told a symposium yesterday that people living in tick-ridden rural areas, nurses dealing with patients with haemorrhagic conditions, laboratory workers and people handling sick and dead animals ran the greatest risk. The first known reports of the fever came from the Crimean War last century, but in SA it was first detected last year when a 15-year-old schoolboy died. [Text] [Johannesburg RAND DAILY MAIL in English 28 Nov 84 p 13]

CHOLERA EPIDEMIC ENDING--The cholera epidemic which has swept through South Africa during the last four years appears to be ending in all areas except the Natal/Kwazulu region. At the height of the epidemic, the 1981/2 period known as Cholera 2, there were an estimated 50 000 suspect sufferers and 11 141 bacteriologically proven cases in South Africa. But during Cholera 4, covering the 1983/4 period, there were 5 434 suspect cases recorded and 1 9 77 proven. Most of the proven cases during Cholera 4--1 939--were in the Natal/Kwazulu region. These figures have been disclosed in the latest issue of Epidemiological Comments, published by the Department of Health. During the Cholera 4 period 20 deaths were reported, 16 of them in Kwazulu. Epidemiological Comments said the 16 deaths in Kwazulu "are probably a function of both the inaccesibility of many villages and homesteads in what is generally a rugged terrain, combined with the limited outreach of prevailing health services." [Text] [Cape Town THE CAPE TIMES in English 23 Nov 84 p 5]

# DIPHTHERIA EPIDEMIC SPREADING FROM GOTEBORG AREA

Oslo AFTENPOSTEN in Norwegian 6 Nov 84 p 4

[Article: "Diphtheria Epidemic Spreading in Sweden"]

[Text] The diphtheria epidemic which broke out in Goteborg has not vet been isolated, as had been thought previously. The first death was registered in Sweden in October and since then, the disease has claimed additional victims. It was thought that the disease had been successfully isolated to prevent its spread, but it now appears that new cases have been registered—nutside of Goteborg as well. Thus it is clear that Sweden may experience a diphtheria epidemic—the first in about 40 years.

An aspect of the uncertainty in the efforts to prevent the discuss from spreading is that people who themselves do not contract the discuss (because they have been vaccinated) can be carriers.

Dr Halvor Rollag at the National Hospital in Oslo told AFT The STEN that there is little reason for panic in Norway over what is happening in Sweden. We have a well-developed vaccination system, but Dr Rollag believes generally that one should be certain to be vaccinated approximately every 10 years.

Should the disease be brought to Norway, it will certainly use through people coming from areas where it is more widespread than locally.

particularly certain to be vaccinated if one is travelling to North Arrica, among other places. However, diphtheria does not occur man.

North Africans in Norway, or among other immigrant groups, the population in general, and the disease has not been regist at the 1950's.

12578

# HEALTH OFFICIAL REFUTES JAPAN'S CHOLERA REPORT

OW23U555 Taipei CNA in English 0232 GMT 23 Nov 84

[Text] Taipei, Nov. 22 (CNA)—Director Hsu Tzu-chiu of the Health Department of the Republic of China Thursday categorically dismissed as rumors that Taiwan Province has been cholera contaminated.

Returning from a Europe trip Wednesday evening, the nation's top health official called in his department's quarantine officials Thursday to understand foreign wire service reports that some Japanese travelers had been infected by cholera following their Taiwan tour.

In a press conference Thursday afternoon, Hsu pointed out that as an "official" infectious disease, cholera can by no means remain unrevealed to the public in a densely-populated Taiwan. "Any slightest sign of this disease would alarm the press and the government here," he added.

"Since there has not been any report of cholera cases in Taiwan, how could more than 30 members of a Japanese tour group contract that disease at one and the same time?" Hsu asked, adding "this is more than unimaginable. Such reports border on absurdity."

He noted that quarantine officials with his department have formed monitor teams around the island early this year and among the 6,000-odd suspected cases, they have not found any involving cholera.

"This is an irrefutable fact open to examination by anyone who is interested. Data in this regard can be reviewed at any time in this department," he stated.

The chief executive of this nation's health affairs further said that from the perspective of one who majored in cholera epidemics, he thinks that this is not the right time for cholera infection.

"The Japanese have repeatedly accused Taiwan for having caused cholera contamination of Japanese tourists. They should fiving up scientific evidences in support of their charges. Otherwise, this country can also release reports that Chinese tourists returning from trips to Japan have been hit by cholera," the official commented.

He continued that a possible case is that those infected Japanese ate too much seafood here, contracting a complication of salmonella's bacillus, whose symptom of diarrhea is similar to that of cholera. "But these two cases should never be confused as one," he added.

CSU: 5400/4116

# HEALTH OFFICIAL DENIES INCIDENCE OF CHOLERA

# OW210257 Taipei CNA in English 0233 GMT 21 Nov 84

[Text] Taipei, Nove 20 (CNA) -- Hsu Shu-tao, director of the Quarantine Division under the Department of Health, said late Tuesday that he was totally in the dark as to why his office has not yet received any reports about suspected cholera cases as have been alleged to have occurred in Taiwan.

we said health stations, hospitals and clinics throughout the island know nothing about the presence of cholera or have treated patients appearing to have been contaminated by cholera bacteria. However, Hsu said that a number of Japanese tourists repeatedly alleged that they had had symptoms of cholera during their recent visit to Taiwan, which has caused serious concern and confusion in his office and among the health efficials.

Furthermore, the quarantine chief said he was surprised at the report by the Japanese health authorities stating that there were 32 Japanese tourists who had contamined thelera in Taiwan, which, Hsu said, was untime. At the same time, travel agencies have urged the Department of Health to clarify the matter with support of findings and make a statement as soon as possible.

As official with the tourism industry said this unilateral Japanese statement alleging their tourist groups to have suffered cholers in Taiwan was lack of evidence and added that the allegation will greatly affect business operations of tourism, food and other industries in this country.

# MALARIA FATALITIES INCREASE

Lusaka TIMES OF ZAMBIA in English 17 Nov 84 p 5

[Text]

ABOUT 1.312 people died from malaria in 1982 from malaria in 1982 throughout the country. 245 more than in 1981. ass stant director for medi-cal services. Dr Sam Nyaywa disclosed yester-

day. Dr Nyaywa said in an interview that the Ministry of Health was worried by this upward trend of malaria and feared that the 1983 figures, still being compiled, would be higher.

He attributed the rise to the laxity by district councils to enforce the Public Health Act which called for the proper spraying of houses and not allowing tenants to grow maize in their backyard gardens.

If all councils enforced the Act properly using the grants they got from the Ministry of Health for the purpose there would be fewer cases of malaria.

Dr Nyaywa said. In 1974 cases of malaria particularly in urban areas were very few "but now the number has reached dangerous proportions with 326 deaths recorded in 1982 on the Copperbelt.

"Urban centres are recording high deaths because people in these areas are less immune than people in the rural areas." He said the cere-bral type was fatal.

The Ministry of Health had sent a circular to district councils to en-courage them to enforce the Public Health Act.

Meanwhile, more than 8,000 lives have been lost on Zambian roads over the past ten years.

This figure was given by the acting executive secretary of the Roads and Road Traffic Board, Mr Phillip Kalinda in an interview.

CATTLE DISEASES IN BAGERHAT--Cattle disease has broken out in many villages of Morreigonj and Rampal Upazilas under Bagerhat district in an epidemic form. People of the affected areas expect the authorities concerned to take effective measures to contain the disease. [Text] [Dhaka THE BANGLADESH OBSERVER in English 12 Oct 84 p 7]

EPIDEMIC CATTLE DISEASES--Kurigram, October 21--More than 400 cattle lost lives as the cattle disease had broken out in an epidemic form in different villages of Kurigram district recently. A good number of cows were attacked by the disease. It is gathered from the affected people, that Halakhana, Kanchchar, Vagdanga, Shuverkuti, Charshiraighar, Char-Baraibari, Khewas Alga, Noon-Khawa, Khewaiar-Char, Kashamat-Malvanpa, Dakfangher Char, Nowafash, Velekopar-Char, Jatrapur, Newasai, Boraviata, Vitar Fand, Namajer-Char, Kanahagar-Char etc. under Kurigram. Ulipur, Negeswari, Fulfier upazilas are the worst affected areas of this district. No departmental measures to prevent the disease have yet been taken. Surprisingly enough it is noted here that Veterinary Hospital authority is quite indifferent to their duties. [Excerpt] [Dhaka THE NEW NATION in English 23 Oct 84 p 2]

KUSHTIA CATTLE DISEASE OUTBREAK--Kushtia, Oct 24--Fifty-eight cattle leads died following an outbreak of cattle disease in Ramkrishnapur union of Daulatpur Upazila. The District Livestock Officer confirmed deaths of cattle. He told me that 300 cattle heads were given vaccination. The Upazila Nirbahi Officer of Daulatpur requested the district administration to send veterinary medical team to the affected area. The Livestock Department asked for medical help from Dhaka to combat cattle disease. [Text] [Dhaka THE BANGLADESH OBSERVER in English 26 Oct 84 p 7]

CSO: 5450/0030

OUTBREAK OF FISH DISEASE—There has been an outbreak of a fish disease in some unclean lakes and small streams and waterways in several areas of Burma causing death to fresh—water fish. The disease was first reported in 1975 in some countries and later spread to Southeast Asia. In Burma, fresh—water fish dying of a disease in townships of Karen and Mon states was reported in August. Departments concerned are taking urgent and strict measures to combat the disease while assistance has also been sought from the Food and Agriculture Organization. It was learned that the sea—water fish are not affected by the disease. The disease also does not spread in big streams and lakes with good flow of water. [Text] [Rangoon Domestic Service in Burmese 1330 GMT 20 Nov 84 BK]

LACK OF CATTLE VACCINE--Comrade Ansumane Djassi, veterinary technician in the Bafata region, informed the Guinean News Agency (ANG) that this year 74,203 head of cattle controlled by the regional veterinary department will not get vaccines against hematic and symptomatic carbuncles, which are the most prevalent diseases among cattle. According to the same technician, the cattle were not vaccinated due to the lack of vaccines, and the death rate for cattle is 20 percent in a region where there is no breeding of any kind. At the present time, the efforts of the regional office are directed toward the raising of rabbits and the rehabilitation of the Madina Bonco zootechnical station-which in colonial times was devoted to the breeding of horses, donkeys and draft oxen-for the raising of chickens and then corn, and in the future will be called the Agricultural-Livestock Center of Madina Bonco. Meanwhile, more than five complaints about rabid dog bites were received by the regional veterinary station, which in collaboration with the state committee has captured and killed those animals. [Text] [Bissau NO PINTCHA in Portuguese 10 Oct 84 p 2]

CATTLE VACCINATIONS—Agents of the Prefectural Livestock Authority are just beginning their livestock census in the 53 districts and guarters. Besides this census, the same teams carried out a vaccination campaign against telluric diseases and external and internal parasitoses as a complement to the anti-plague campaign which has already covered the whole of the north-western frontier. During this vaccination campaign, 6,932 cattle were immunized, against 8,334 checked and 19 calves were also rid of parasites. [Text] [Conakry HOROYA in French 29 September 84 p 3] 9825

FIGHT AGAINST GOAT POX--Since 1982, goat pox has been rampant in Hooghly district, taking a heavy toll, according to a statement issued by the district's veterinary officer. To combat this disease, a team of experts from the India Veterinary Research Institute in Izatnagar and other veterinary specialists have taken up experimental vaccination. The team is now studying the efficacy of the vaccine and the epidemiology of the disease. The disease, according to the statement, was caused by a virus previously unknown in the region. [Text] [Calcutta THE STATESMAN in English 29 Oct 84 p 3]

CSO: 5450/0043

### NEW MEASURES AGAINST RABIES ADOPTED IN MAPUTO

Maputo NOTICIAS in Portuguese 19 Nov 84 p 1

[Excerpt] A meeting was held recently by the Veterinary and Preventive Medicine Departments and the Executive Council of the City of Mapute, at which steps were taken in connection with the increase in the number of cases of rabies in our capital.

On the basis of the decisions adopted at the meeting, as announced by the Maputo Provincial Agricultural Office, the secretaries of the sponsoring groups have been entrusted with the registration of the owners of cats and dogs in the precincts, and the identification of the animals they own.

The movements of these animals have also been restricted, and strays or unregistered animals will be collected by the Executive Council.

The general public is asked to report abandoned animals and their whereabouts to Executive Council officials.

In Urban District No 1, where the incidence of rabies is highest and where participation in the vaccination campaign was poor, a second campaign will be launched.

This whole complex of measures arises out of the increase in the number of rabies cases reported in Maputo in recent months. This is the product of the low level of participation in the canine and feline vaccination campaigns, and failure to observe health measures.

The Provincial Agricultural Office cited as an example the campaign last July and August, which, although preceded by proper organization with the involvement of city bodies on all levels, resulted in a very low number of animals vaccinated in the Polana-Cimento, Alto Mae, Malhangalene B, Xpamanine, Minkadjuine and Chamanculo A and B neighborhoods.

On the other hand, due to the breakdown of the Executive Council vehicle used for collecting cats and dogs, a large number of abandoned animals are to be found in the city, posing a serious public health threat.

In addition to this, there are abandoned dogs which live permanently in the yards of housing premises or dwellings, where they are fed by various tenants who do not, however, take responsibility for their vaccination.

Rabies is a contagious disease caused by a virus and transmitted by rabid animals by means of bites, or when the virus contaminates a wound.

5157

### RINDERPEST CAMPAIGN AIMS AT ERADICATION

Kaduna NEW NIGERIAN in English 5 Oct 84 p 12

[Text] NIGERIA will fully participate in the Pan-African rinderpest campaign aimed at eradicating rinderpest and pleuropneumonia in 28 African countries within the tropical region, Governor S. B. Atukum, has said.

He said at the national conference on disease of ruminants and the diamond jubilee delebration of the National Veterinary Research Institute, Vom, on Wednesday that Nigeria will give its full support to the campaign being sponsored by FAO and OAU to ensure that it was successful.

"The present administration will do its best to implement policies and programmes which are in the interest of Africa in general and of this country in particular," the Governor said.

The campaign will begin in December, this year.

Governor Atukum said the Federal Military Government did not want the episode of rinderpest to repeat, and urged the participating scientists at the conference to discuss cattle diseases and come out with a strategy which would wipe out tropical plague of livestock.

He said the nation expected a lot from the scientists on the development of indigenous technology to reduce dependence on industrialised countries "as no country can progress if it relies upon others for everything, including essential food items."

The director of the institute, Dr. Abubakar Lamorde, said the institute which started as a training centre for local "stock inspectors or malams" on how to control contagious diseases, had developed into modern institute producing 15 types of vaccines, including rinderpest.

CATTLE INOCULATIONS, CLINICS—THIRTY thousand head of cattle were innoculated against various diseases in Malumfashi Local Government Area of Kaduna State. According to a release signed by the Local Government Information Officer, Malam Ibrahim A. Kankara Sain, 11,683 adults and 6,398 calves were treated in Malumfashi District alone while 8,292 adults and 3,383 calves were treated in Kankara District. Similarly 229 animals were also treated against diseases such as worms while 285 bulls were castrated. He added that the exercise was headed by a divisional veterinary officer and livestock superintendent and urged cattle rearers to co-operate with the officials. Also in Malumfashi, three new clinics built by communal labour have been opened. Already 7,000 Naira has been earmarked for purchase of drugs and other officer equipment for the coinics, the Sol Administrator, Alhaji Saidu Zaria, has announced. [Excerpt] [Kaduna NEW NIGERIAN in English 9 Oct. 84 p 3]

SELLING SICK ANIMALS--PEOPLE of Igbo-Eze Local Government area have been urged to avail themselves of the services, of the veterinary department and stop selling infested animals. Briefing the press at Ogrute, Enugu-Ezike, the veterinary officer in-charge of the department, Dr. Greg Okoye, described as pitiable the nonchalant attitude of the owners of livestock and pet animals in the area towards veterinary services. Dr. Okoye decried the people's preference for selling infested animals for human consumption instead of sending them to the department for treatment. He said such action could lead to the spread of diseases like rabies, tuberculosis, jaundice, rinderpest, food and mouth diseases. Dr. Okoye said that the Igbo-Eze Local Government was prepared to prosecute those who circumvent meat inspection by-law. [Excerpt] [Lagos DAILY TIMES in English 12 Oct 84 p 10]

CAT FLU-East London-An East London vet confirmed yesterday that the killer disease, canine parvovirus (cat flu), had claimed the lives of a large number of animals here over the past few weeks. He said the number of cases of cat flu in East London had increased over the last few weeks and emphasised that the most important preventative aid in combatting the disease was an effective vaccination schedule. A few cases of distemper had also been observed recently and a similar vaccination schedule was advised for pets as soon as possible.--DDR [Text] [East London DAILY DISPATCH in English 15 Nov 84 p 3]

BETTER 447 CHARACTER SCHEDULE MEEDED

Hanoi TAP CHI HOAT DONG KHOA HOC in Vietnamese Sep 84 pp 77

[Article by Dao Trong Dat: "Hog Cholera Prevention, Control in our lountry at the Present Time"]

Text] During the past few years, stock raising in our country has uniformly developed, including an increase in the quantity and quality of hog raising. However, great losses have continued to occur due to various diseases, noteworthy of which has been hog cholera. The author presents a number of new understandings on this disease and his opinions on consolidated methods of preventing and controlling hog cholera. This is also one of the problems recognized by the Ministry of Agriculture for technical progress and balancing conditions of achievement expansion.

Hog raising in our country at the present time is developing every year with the hog herd increasing both in quantity and in quality.

Many technical advances such as the raising of crossbred hogs, use of concentrated feeds in stock raising, artificial insemination, various forms of high quality drugs for disease prevention and control, etc. with wide use in stock raising have made an important contribution to that development.

However, we are still encountering many difficulties and obstacles with great losses caused by iomestic animal diseases. According to still incomplete statistics, the number of leaths caused annually by disease in many local areas is estimated to be about 8 percent of all hogs being raised. According to the statistical data from countries with a developed economy, developed industrial stock raising and a good veterinary organization, overall losses including leaths due to disease, reduced productivity due to parasitic insect infestation, deficiencies in feeds or stock raising techniques, etc. are all estimated to be less than 5 percent of the total stock raising product. In the developing areas, these losses are about 10 percent; while in countries where stock raising development is still slow and veterinary services still not well organized, losses reach 20 percent. In our country, if the number of leaths due to disease alone amount to about 9 percent, the total losses caused by unorganized veterinary services may be estimated at about 15 percent of the gross annual stock raising product. This is a fairly great loss to the national economy which could be avoided if we gave the proper level of attention to investing in organization and construction of the veterinary sector.

Mar stolera, swine erysipelas and pasteurellosis are familiar diseases which still exist in our country with hog cholera still presenting the createst threat.

The cholera is caused by a virus, is highly contagious and spreads in a rapid uni-widespread manner. In hog herds not immunited against the hor cholera virus, infection results in a sickness rate of 97 to 100 percent with also a fairly high death rate. Hog cholera developed in our country during the years from 1923 to 1925. Since then, many major epidemics of the disease have occurred with serious losses to hog raising.

Threins the past few years, although no major outbreaks have occurred, the Harase still appears sporadically in all provinces and cities and causes appreciable losses. One occurrence worthy of attention is that the disease often levelops in the concentrated breeding and individual family stock raising areas. Since 1974, we have observed many such pockets of hog cholera in Hanoi, Wallon Binh, Thanh Hoa, Ha Hac, Hai Hung, Ha Nam Winh, Quang Winh, Dac Thai, Ho Did Minh City, etc. In the concentrated hog raising farms, the disease primarily affects the young animals; while in the family area, it develops in both the sows and the young animals such as in Thanh Noa and Hai Hung turing 1983. The disease contraction age of the young animals is fairly early; we have observed some only 16 days old with the classic clinical and post-mortem indications of hog cholera (Thanh Hoa in 1983). Generally speaking, the younger animals contract the disease the most, at the time when they are Tho Ad days old. The disease therefore usually spreads slowly and persistently to create many obstacles for animal breeding and raising.

In order to have methods for resisting the disease with progress toward control, we must have a grasp of the following problems.

All hogs are naturally infected with the hog cholera virus, especially the high projuction hog breeds. Wild pigs have shown little natural resistance to the hog cholera virus. Thus, the animals carrying and transmitting the disease naturally are actually those who have been infected with the virus in the incubation period, those that have naturally recovered from the disease but still carry and discharge the virus or those that are infected with the virus but do not become sick, called a dormant infection.

Tyread and transmission of the hog cholera virus are primarily through a direct route from sick or carrier hogs to healthy animals not yet immunited against hog cholera, from one animal to another in the heri or through feed infected with the virus or mechanical carriers such as infected stock raising tools, etc. Hog cholera may also be transmitted through the placenta of the sow to her young. This method of transmission is considered one of the reasons for the prolonged existence of hog cholera in many areas and breeding farms and their easily becoming a source for spreading pockets of contagion into other areas and hog farms.

Pecause hos cholers is such a langer to hos raisins, luring the more than 100 years since it was first described (1883), research has been carried out to find methods for effectively preventing and controlling the discuss. Tope numbers have organized state programs with large capital expeniitures to eliminate hog cholers.

February and control this disease, two methods were carried out the control this disease, two methods were carried out the control this disease, two methods were carried out the control this disease, two methods were carried out the control of the disease only occurs in a control of the con

- . impulsing public announcement of the disease.
- In order to define the scope (administrative area, breeder farm, pen area, pen area, etc.).
- 7. Innomirate efforts to burn or bury the bodies while forbidding butchering of them that involved in research diagnosis conducted by veterinary calres.
- . Invirale the disease, disinfect pockets of contagion and handle sick animals in advortance with propulgated veterinary stipulations and laws.

Inversely, in countries where the disease is still widespread and the social uni economic staniaris are still not leveloped, the method of disease prevention immunisation with a specific varcine is considered primary. At the same time, constant attention must be given overall prophylactic sanitation. Only on the basis of fully achieving the two disease prevention and control measures above can it be possible to gradually control and advance toward elimination of the control of a rationwide scale.

Involution with a specific vaccine for prophylactic immunity creates a literaction virus sensitivity for the hor which has an immuniting ability to result the virus when it strikes. This is an active preventative method with great effectiveness at the present time.

The my cholera vaccinations, we are presently using a type of Chinese rabbitattenuated how cholera vaccine. It is an attenuated vaccine of bigh mafety
which may be used on how of all ages, including present sows and those who
have already given highly effective with the ability to protect 25 to 100
percent of the vaccine is highly effective with the ability to protect 25 to 100
percent of the animals inoculated. The period of immunity may last more than
I was after the vaccination. Because the vaccine mickly greaten an immunity
available the disease after inoculation, it may be used for loss in locations
where the ilsease is already present or those where the threat of out real
evists. In conjunction with the antievement of ceneral methods of prophylantic
activities, is collation with Chinese rabbit-attenuated for cholera vaccine ilparity in the packets of contarion is considered a lecisive and effective manafor starping out these packets.

The inoculation of all hogs with hog cholera vaccine must be considered as a technical method of legal and compulsory nature to the hog raiser.

The inoculation of hogs has always been stipulated as three types of vaccines per years how cholera, swine erysipelas and pasteurellosis in three periodic states. In locations fully implaenting these inoculation phases, stipulated ". Thiniques have been precisely assured, a high ratio (more than 80 percent) of the hogs have been inoculated and the spread of the disease has been greatly controlled, assisting in protecting the hog berd. However, we know that the hor herd constantly fluctuates: sature hogs are butchered, new hogs are born and new animals are brought in. If only one phase of inoculation is held every I ar . months, many hogs turing this interval will nature without being inoculated and many inoculated hogs will be butchered in reduce the ratio of imminiced hogs and gradually raise the percentage of animals susceptible to the hog cholera virus. This is one of the reasons for the growth of the disease. In conjunction with these weaknesses in the all inoculation schedule, technical errors in inoculation due to the failure of those athinistering the vaccines to fully comply with technical stipulations or objective naterial difficulties in vaccine maintenance and transportation have resulted in ineffective inoculation, prolonged disease and losses. Recause our veterinary network organization is still unstable and the work supervision of the sector as well as the concern of the party and local government in many locations is not yet truly of the proper level, periodic inoculation in many locations still has a tendency of not meeting requirements. These are the reasons that the disease has not yet teen controlled.

Inoculations may be carried out in two degrees.

The is in the general organization situation of our veterinary sector as at the present time in which local areas throughout the country must have a firm grasp of the inoculation schedule and well-achieve the inoculation of hog cholera vaccine to assure that about 90 percent of the nogs are inoculated with special attention not to omit breeder sows and not to commit errors in technique in order to assure inoculation quality.

The second is for local areas with well-organized veterinary networks conducting uniform activity and presently achieving stock raising assurance to carry but inoculations for hog cholera in accordance with a new inoculation schedule. Begular monthly ineculation of all young hors 40 days old and older will assure that all hogs are inoculated for how pholera before leaving the pen to be fattened for butchering. Breeder sows will be inoculated between two breeding nyoles, that is after the young hogs are weamed and before or after the now is bred. Inoculations carried out in this nammer will assure that all bors at the are requiring inoculation will be inoculated and that a high ratio of innume horn in the heri will be constantly maintained. This incomiation program him been established on the basis of the characteristics of hog immunity against her sholers. Our research results as well as those of many other writers have whose that a properly inoculated breeder one can transfer the cholera resistant intitodies to her young tirrust her polostrus. The suckling pla requires these antibulies through the ollostrum and is protected himself when struck by the how sholers virue. This tenusity of the young pic is probably maintained for

only about 30 days. Because the young pig becomes naturally susceptible to the hog cholera virus after the 30th day, any exposure to the virus at that time will result in rapid development of the disease. However, it is possible that the immunity of the pig is formed and slowly perfected. Documents have indicated that when hogs are inoculated with hog cholera vaccine after they are more than 45 days old, their immunity and protection against hog cholera lasts for a year and a half, but when inoculated at 30 days, they have protective immunity for only 3 months and only 9 months after the inoculation when inoculated at 35 to 40 days. Therefore, we believe that such monthly inoculation of hogs 40 days old with hog cholera vaccine will give them 9 months immunity, meaning the hogs will be more than 10 months old and one inoculation will be sufficient to protect the life of a meat hog.

Achievement of this inoculation program requires the constant preparation of ready technical materials. Another important element is that network organization must be stable and strong with a firm grasp of hog heri circulation during each period in order to have specific plans for the monthly inoculation; and special emphasis must be given to managing the breeder raising areas to assure thorough and proper inoculation of all breeder sows and young pigs before they leave the pen for further raising.

Finally, it is necessary to state that inoculation with hog cholera vaccine to prevent the disease in our country is presently considered a primary task which may be conducted in accordance with an annual cyclic inoculation schedule of three times each year or regularly each month depending upon the specific conditions of each local area. However, in order for the inoculations to achieve better disease prevention results, we must strive to well-organize the overall prophylactic sanitation work and other stipulated veterinary regulations.

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'PAMRI' PEST ATTACK--Kushtia, Oct 19--Standing crops of vast areas of Khoksha, Kumarkhali, Kushtia Sadar, Mirpur, Bhemara and Daulatpur Upazila under Kushtia district have been attacked by Pamri pest and it is fast spreading to other paddy fields. The farmers of the affected areas said that stagnant water has created problem in spraying insecticides in the affected paddy fields. While visiting some of the affected areas a number of farmers told this correspondent that their economic backbone was shattered by the recent floods and as a result of it, they are passing their days in a very deplorable condition. They are not in a position to purchase costly pesticides in order to spray over the affected seedlings. [Text] [Dhaka THE BANGLEDESH TIMES in English 20 Oct 84 p 2]

'PAMURI' PEST ATTACK--Patuakhali, Oct 24--Due to inroads of pests locally known as "Pamuri" the standing crops of more than 25 thousand acres of paddy lands of Charkazal, Panpatty, Barobaishdia, Chhotabaishdia, Raugabali Unions of Galachipa upazila have been damaged. As a result the farmers are going to sustain a loss of probable crops worth Tk 6 crore at least. All the unions of Kalapara upazila have also been attacked by the insect causing damage to the standing crops of more than 40 thousand acres of paddy land. Similar reports have been received from farmers of some affected areas of Patuakhali Sadar upazila. Immediate steps for aerial spray may be made to combat the campaign of the insects. [Text] [Dhaka THE BANGLADESH TIMES in English 25 Oct 84 p 2]

LEDA POKA PEST ATTACKS--Faridganj, Chandpur, Oct 25--An area of about 350 acres of Aman paddy has been attacked by pests popularly known as Leda poka at Rupsha, Kalipura, Subidpur and the adjoining areas of Faridganj upazila under Chandpur district creating widespread despair among the farmers. When contacted Agricultural Extension Office of Chandpur has confirmed the pest attack in the above areas. The pests mainly eat up and destroy the sheafs of paddy grown by the farmers who are already affected by the recurring floods. A vast area of Chandrabazar of the same upazila has also been attacked by pests, according to a reliable sources. [Excerpt] [Dhaka THE NEW NATION in English 29 Oct 84 p 2]

CSO: 5450/033

RICE INFESTATION REPORTED—Kota Baru, Fri—The Kemubu Agriculture Development Authority (Kada) has launched a big-scale operation to destroy the "kesing kura-kura" and "kutu beruang" bugs which had damaged thousands of hectares of padi in several districts recently. The authority is focusing on the Selising area in the Pasir Puteh district as the area was the worst hit. Other affected areas were Bukit Merbau, Banggul Mak Esah and Seligi. Kada general manager Dr Hassani Nik Mohamad said insecticide was used on the affected padi fields with the help of villagers. Dr Hassani urged farmers to co-operate with the authorities by reporting any attacks by pests to avoid big losses. They were told to report their problems to the nearest Kada office so that immediate action could be taken. [Text] [Kuala Lumpur NEW STRAITS TIMES in English 3 Nov 84 p 6]

MEALYBUG OUTBREAK--AN outbreak of cassava mealy bug and green spider mites has been reported in Oyo State, the state Commissioner for Agriculture and Natural Resource,s Mr Olusegun Ojutalayo has said. Mr Ojutalayo who was declaring open the 17th annual conference of the local branch of the Entomological Society of Nigeria at the Forestry Research Institute of Nigeria, Ibadan said the situation had posed a serious threat to cassava production in the state. Mr Ojutalayo explained that in the tropics, about 30 per cent of agricultural production was lost to pest annually, 25 per cent for cereals, 30 per cent for grains and legumes and between 20 and 70 per cent for cocoa, cola and coffee. The commissioner opined that prevention of the losses would result in over-all increase in food production and bridging the gap between production and consumption. He hoped that the measure would reduce food importation, improve the economy and international position of the country. Mr Ojutalayo held that any attempt at increasing food production which failed to recognise pest management in the package of inputs was not likely to achieve the desired result. The commissioner called for a research into the extermination of insect pests plaguing the farmers inorder to reduce crop losses to the minimum. Photo shows Mr Ojutalayo (3rd right) and his counterpart from Kwara State, Dr Babajide Matanmi (wnd right) inspect the exhibition mounted by the society while others look on. [Text] [Enugu DAILY STAR in English 16 Oct 84 p 12]

# CROP DAMAGE FROM PESTS, DISEASES REPORTED

BK061131 Hanoi Domestic Service in Vietnamese 1300 GMT 30 Nov 84

[Text] The Vegetation Protection Department of the Ministry of Agriculture recently issued a notice saying that the 10th-month and early winter-spring rice crops in southern provinces are being attacked by brown planthoppers, stem borers, rice gall flies, and (?brown leaf spot).

Brown planthoppers alone have damaged more than 30,000 hectares of 10th-month rice in the Mekong River delta. In some places, crops have been completely destroyed by massive planthopper attacks. Meanwhile, stem borers have caused substantial damage to the late 10th-month and early winter rice crops in the key rice-growing provinces in the Mekong River delta and the coastal provinces in central Vietnam.

In northern provinces, sixth-generation stem borer caterpillars have continued to lay eggs, causing damage to the 5th-month rice seedlings. In the 10th-month ricefields already harvested, the density of stem borers on the rice stubbles remains high, with some places have 50-60 insects per square meter. Some winter crops including potatoes are being attacked by leaf blister and silver-leaf disease [Xanthomonas pryzae]. Meanwhile, late blight has developed in vast areas of soybeans which are also being ravaged by cutworms, leaf-eating caterpillars, and diamondback moth.

It is forecast that in the period that lies ahead stem borers and rice leaf beetles will continue to cause damage to the 5th-month rice seedlings; that late blight will continue to attack soybeans in northern provinces; that rice gall flies will inflict heavy losses to the winter-spring rice seedlings in central provinces; and that brown planthoppers, stem borers, and young leaf rollers will damage the 10th-month and winter-spring rice crops in the Nam Bo Provinces.

The northern localities should continue to destroy stem borers and their eggs on the 5th-month rice seedlings, plow the fields to exterminate stem borers and rice leaf beetles hiding in rice stubble, and spray potatoes and tomatoes with insecticides to prevent diseases. The southern provinces in particular should use all means to exterminate brown planthoppers and rice gall flies on the winter-spring rice seedlings while continuing to prevent other kinds of harmful insects and diseases from spreading to larger areas.

CSO: 5400/4327 END

# END OF FICHE DATE FILMED

8 Jan 1985

